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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/465,298	12/17/1999	DARRYL FRANKLIN CLARK	14543	8717

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EXAMINER

BEFUMO, JENNA LEIGH

ART UNIT	PAPER NUMBER
1771	9

DATE MAILED: 05/21/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/465,298

Applicant(s)

CLARK ET AL.

Examiner

Jenna-Leigh Befumo

Art Unit

1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-3,7-23 is/are pending in the application.
- 4a) Of the above claim(s) 18-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,7-10,16 and 17 is/are rejected.
- 7) ☒ Claim(s) 11-15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 1771

DETAILED ACTION

1. The papers filed on **March 4, 2002** (certificate of mailing dated **February 7, 2002**) have not been made part of the permanent records of the United States Patent and Trademark Office (Office) for this application (37 CFR 1.52(a)) because of damage from the United States Postal Service irradiation process. The above-identified papers, however, were not so damaged as to preclude the USPTO from making a legible copy of such papers. Therefore, the Office has made a copy of these papers, substituted them for the originals in the file, and stamped that copy:

COPY OF PAPERS ORIGINALLY FILED

If applicant wants to review the accuracy of the Offices copy of such papers, applicant may either inspect the application (37 CFR 1.14(d)) or may request a copy of the Offices records of such papers (*i.e.*, a copy of the copy made by the Office) from the Office of Public Records for the fee specified in 37 CFR 1.19(b)(4). Please do **not** call the Technology Centers Customer Service Center to inquiry about the completeness or accuracy of Offices copy of the above-identified papers, as the Technology Centers Customer Service Center will **not** be able to provide this service.

If applicant does not consider the Offices copy of such papers to be accurate, applicant must provide a copy of the above-identified papers (except for any U.S. or foreign patent documents submitted with the above-identified papers) with a statement that such copy is a complete and accurate copy of the originally submitted documents. If applicant provides such a copy of the above-identified papers and statement within **THREE MONTHS** of the mail date of this Office action, the Office will add the original mailroom date and use the copy provided by applicant as the permanent Office record of the above-identified papers in place of the copy made by the Office. Otherwise, the Offices copy will be used as the permanent Office record of the above-identified papers (*i.e.*, the Office will use the copy of the above-identified papers made by the Office for examination and all other purposes). This three-month period is not extendable.

2. Amendment A, submitted as Paper No. 8 on March 4, 2002, has been entered. Claims 4 - 6 have been cancelled. Claims 1, 7 - 11, and 16 have been amended. Therefore, the pending claims are 1 - 3, 7 - 23.

3. The corrections to the drawings and the new formal drawings submitted are sufficient to overcome the objections set forth in section 7 - 10 of the previous Office Action.

Art Unit: 1771

4. Amendment A is sufficient to overcome the objection to claim 16 set forth in section 11 of the previous Office Action.

5. Amendment A is sufficient to overcome the 35 USC 103 rejections to claims 1 – 5, 9, 10, 16, and 17 over Krueger et al. (4,729,371) in view of Butt, Sr. et al. (5,492,751) and Aishima et al. (3,900,678) since the limitations of claim 6, which recited the spunbond layers were made from bicomponent fibers, were added to independent claim 1.

6. With respect to the 35 USC 103 rejections to claims 1 – 9 and 16 over Lickfield et al. (EP 0754796 A1) in view of Sudduth et al. (5,770,531), the rejection has been withdrawn, since, while Lickfield et al. does suggest bi-component fibers in any of the web layers in the laminate, Lickfield et al. fails to positively teach using bicomponent fibers in the melt blown layer. A new rejection based on Lickfield et al. is set forth below.

Election/Restrictions

7. Applicant's election without traverse of Group I, claims 1 - 17 in Paper No. 8 is acknowledged. Claims 18 – 23 are withdrawn from consideration as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 103

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. Claims 1 – 3, 7 – 9, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lickfield et al. in view of Krueger et al. and Sudduth et al.

The features of Lickfield et al., Krueger et al., and Sudduth et al. have been set forth in detail in the previous Office Action. Lickfield et al. discloses a nonwoven laminate comprising a

Art Unit: 1771

meltblown nonwoven layer sandwiched between two spunbond nonwoven layers. The diameter of the meltblown fibers are less than 1.5 microns. Also, the meltblown layer is inherently formed by the fibers autogenously bonding together. The laminate has a hydrohead measurement of up to 80 cm water pressure, or about 78 mbars (page 3, line 10). Lickfield discloses that the fibers or filaments used in *any* of the webs of the composite structure may comprises a bicomponent polymeric structure. While it is acknowledged that Lickfield et al. only has examples with the bicomponent fibers in the outer layers of the laminate, Lickfield et al. does suggest that *any* of the webs of the composite structure, which includes the meltblown center layer, can be made from bicomponent fibers. Further, Lickfield et al. discloses that the bicomponent fibers can have a first component of polypropylene or polyethylene and a second component of polyester. Lickfield et al. fails to explicitly teach using a bicomponent fiber in the meltblown layer.

Krueger et al. is drawn to a nonwoven meltblown layer made of bicomponent fibers which are less than 5 micrometers in diameter. Krueger et al. discloses that the bicomponent nonwoven material is loftier than conventional nonwoven meltblown fiber webs and the webs also have lower pressure drops and higher filtration efficiencies (column 1, lines 58 – 66). The bicomponent fabric can be made from polypropylene, polyethylene and polyethylene terephthalate components. Therefore, it would have been obvious for one having ordinary skill in the art to substitute the bicomponent meltblown taught by Krueger et al. for the meltblown layer taught by Lickfield et al. since Lickfield et al. suggests that bicomponent fibers can be used in any layer of the fabric laminate and Krueger et al. teaches that the bicomponent meltblown layer is loftier, with a lower pressure drop and a higher filter efficiency.

Art Unit: 1771

Lickfield et al. fails to teach the diameter of the fibers in the spunbond layers of the laminate. Sudduth et al. is drawn to a spunbond/meltblown/spunbond (SMS) laminate. The fibers in the spunbond layer of the SMS laminate have a diameter of 10 – 20 microns. Therefore, it would have been obvious to one having ordinary skill in the art to choose spunbonded fibers with a diameter of 10 – 20 microns in the spunbonded layer of the SMS laminate taught by Lickfield et al. since it has been held to be within the general skill of a worker in the art to select a known material (i.e., spunbonded microfibers with a diameter of greater than 10 microns) on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416. Optimizing the size of the spunbond layers will help maintain the strength and resiliency of the fabric layers while keeping the fabric laminate soft and flexible.

Although the limitations of Frazier air permeability and cup crush energy are not explicitly taught by Lickfield et al., it is reasonable to presume that said limitations would be met by the combination of Lickfield et al., Krueger et al., and Sudduth et al. Support for said presumption is found in the use of similar materials (i.e. bi-component fibers with similar diameters) and in the similar production steps (i.e. bonding together spunbonded and meltblown fabrics) used to produce a SMS laminate. The burden is upon the Applicant to prove otherwise. Therefore, claims 1 – 3 and 7 – 9 are rejected.

With respect to claim 16, Sudduth et al. discloses that SMS fabrics can be modified to have various numbers of meltblown and spunbonded layers in the laminate, including a SMMS nonwoven (column 3, lines 30 – 49). Also, Sudduth et al. discloses using meltblown polypropylene nonwoven fabrics in the multi-layered laminates (column 7, lines 45 – 55). Therefore, it would have been obvious to one having ordinary skill in the art to use an additional

Art Unit: 1771

polypropylene meltblown layer between the spunbonded layers of the laminate to modify the barrier properties of the laminate and customize the laminate to specific end-uses. Thus, claim 16 is rejected.

10. Claims 10 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lickfield et al. in view of Krueger et al. and Sudduth et al. as applied to claims 3 and 16 above, and further in view of Aishima et al.

The features of Lickfield et al., Krueger et al., and Sudduth et al, have been set forth above. Lickfield et al. fails to teach using crystalline propylene polymers and amorphous polyalphaolefin components as the components of the bi-component fiber. Aishima et al. is drawn to bi-component fibers. Aishima et al. teaches using a crystalline polypropylene and a random or block copolymer of polypropylene and another olefin as the components of the bi-component fiber (abstract). Aishima et al. teach that the bi-component fiber has superior crimpability and a favorable hand as well as excellent mutual adhesion (column 1, lines 56 – 60). Therefore, it would have been obvious to one having ordinary skill in the art to use the components taught by Aishima et al. as the components of the bi-component fibers taught by Lickfield et al. to improve the crimpability and hand of the fibers as well as the adhesion of the fibers to eachother and other layers of the laminate.

Although Aishima et al. fails to teach the crystallinity of the fiber's components it is presumed that the components have the claimed crystallinity. Aishima et al. discloses that the crystalline polypropylene is produced by a stereospecific polymerization catalyst (column 2, lines 62 – 66), which would inherently produce a highly crystalline polymer. Further, the second component which is a copolymer of polypropylene and another olefin (column 3, lines 15 – 27)

are similar to the copolymers that Applicant discloses using as the second component on page 8 of the specification. Therefore, claims 10 and 17 are rejected.

Allowable Subject Matter

11. Claims 11 – 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art fails to teach or fairly suggest a SMS nonwoven fabric wherein the meltblown layer comprises a multi-component fiber wherein the first component is an elastic polyolefin and the second component is an elastic polymer.

Response to Arguments

12. Applicant's arguments with respect to claims 1 – 3 and 7 - 17 have been considered but are moot in view of the new grounds of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jenna-Leigh Befumo whose telephone number is (703) 605-1170. The examiner can normally be reached on Monday - Friday (9:00 - 5:30).


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (703) 308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Application/Control Number: 09/465,298
Art Unit: 1771

Jenna-Leigh Befumo
May 9, 2002

gmb


CHERYL A. JUSKA
PRIMARY EXAMINER